

TX-0 COMPUTER
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Paper Tape and Mag Tape Input Routines

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Paper Tape Input Routine:

The standard input routine for binary tapes is that shown on the next page. The block format is:

| | |
|---------|--|
| sto fa | first address |
| -sto-la | last address |
| wd 1 | data words |
| . | |
| . | |
| wd n | |
| cks | - sum of all other words in block. |

There are two types of start blocks to denote the end of the tape. Immediate start blocks consist of trn starting address, and transfer at once to the address specified. Delayed start blocks consist of add starting address, and will stop on a halt in the input routine, transferring to the starting address when restart is pressed.

The new input routine contains one halt instruction which is reached for both delayed start blocks and checksum errors. Delayed start blocks will display add starting address in the LR, while checksum errors will display sto last address in the LR. Pushing RESTART will transfer to the starting address if stopped on a start block, and will restart the input routine in case of a checksum stop. In the latter case care should be taken that the tape is positioned in the reader at the beginning of a block.

standard input routine

readin

177561

```
b,      r3c
        sto a
        trn a
        cyl+lro+xro-opr-opr
        trn d
        r3c+lad-opr
        alr+xro-opr
c,      r3c
a,      xx
        lad
        alr
        ado a
        tix c
        r3c+lad-opr
        tze b
        ldx .-1
d,      hlt
        trx 0
```

xx=halt

start add b

Mag Tape Input Routine:

This is designed to read binary mag tapes written by Mag Tape Midas during an assembly. The coding is shown on the next page.

To use this routine, the mag tape must be positioned at the beginning of the program on tape. (Usually this involves rewinding the tape after an assembly.) Place the Mag Tape Input Routine in the PETR and hit READ-IN. The routine will be read into core, and immediately start reading the mag tape. When it reaches the start block, it will transfer control at once to the address specified in the case of immediate start blocks, or it will halt with add starting address in the LR, and twice this in the AC in the case of delayed start blocks. Pushing RESTART will transfer to the starting address.

Checksum errors halt with -0 in the AC. When RESTART is pushed, the TAC is checked. If positive, the tape is backspaced and another attempt is made at reading the record in error. If negative, the record in error is left in core as read, and the routine continues reading the next block.

mag tape input routine

readin

17742|

```
beg,      tac
          trn .+2
          bsr+1
next,     rtb+1
          cpyUlaCULxr
          trn lve
          cyl
          trn halt
          slr data
          cpyUlaC
          add data
          axr
          sto cks
loop,     cpyUlaC
data,     sto
          add cks
          sto cks
          ado data
          tix loop
          cpyUlaC
          add cks
          tze next
          clc
          hlt
          tra beg
halt,     hlt
lve,      cyl
          trn next
          trx
cks,      0
```

start add next